December 6, 1999

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
The Portals, TW-A325
445 12th Street, S.W.
Washington, D.C. 20554

Re: Ex Parte Notification – WT Docket No. 99-168

Dear Ms. Salas:

This letter is being filed on behalf of Motorola, Inc. (Motorola). Here Motorola addresses a proposal from US West[1] that addresses, in part, how the spectrum in the commercial-use portion of the 746-806 MHz band should be allocated.

In their filing US West presented a slide entitled "Motorola Band Plan - Consistent with US West." This band plan is reproduced again here in Figure 1.

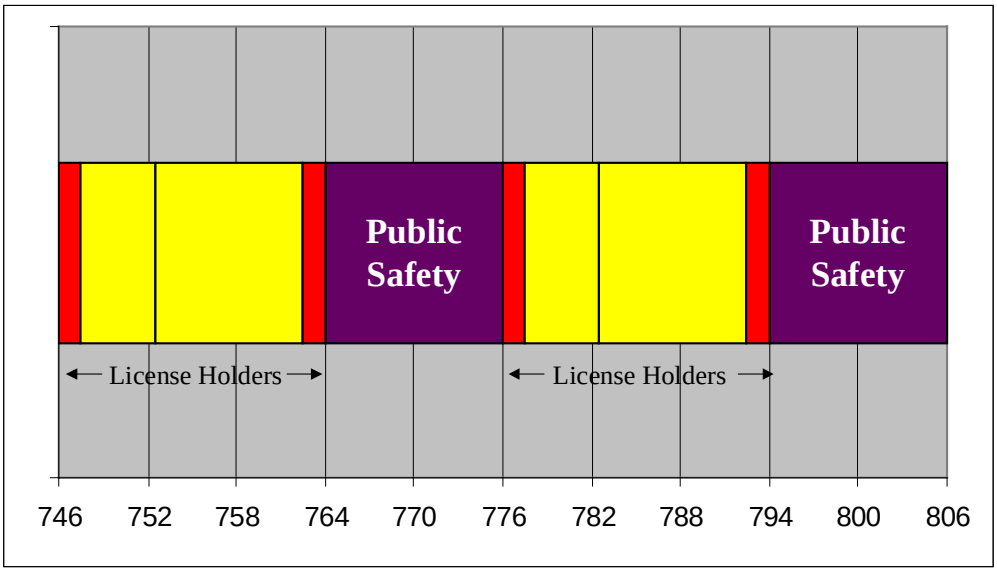

Figure 1

[1] *See* Letter from Elridge A. Stafford to Magalie Roman Salas, November 10, 1999.

As indicated by the title of this slide, this band plan is consistent with the plan which Motorola has presented which entails setting aside 1.5 MHz of spectrum at the edges of the commercial allocations for the protection of the already allocated Public Safety spectrum.

In this letter Motorola considers the disposition of the remaining 30 MHz of commercial use spectrum. The US West proposal shows a division into one 2×5 MHz license, and one 2×10 MHz license. As we have stated previously in this proceeding, Motorola believes that this spectrum is primarily suited for 3G applications. One of the anticipated 3G technologies is the 3.84 million chips per second (Mcps) wideband CDMA (W-CDMA) air interface. As this is the anticipated technology with the widest bandwidth, Motorola has been basing most of its interference analyses on this technology.

As we have also stated in previous filings, we believe that the maximum energy deposited into the 764-776 MHz Public Safety band by a non-frequency coordinated commercial-use base station should be -57 dBm in a 6.25 kHz channel. Also, as we have stated, the minimum frequency separation needed to achieve this level of out-of-band emission from the center of a 3.84 Mcps W-CDMA carrier is 5.25 MHz.

We have not entered into the record of this proceeding any discussion of the required protection from commercial mobile subscribers transmitting above 776 MHz into the Public Safety mobile subscribers receiving below 776 MHz. However, we did suggest as part of the Public Safety proceeding that

> "…the commercial mobile station transmitter's absolute coupled power must be less than -75dBm at 775.99375 MHz or anywhere in the public safety mobile station receive band when measured in a 6.25 kHz bandwidth. This coupled power requirement must be met by the commercial mobile station without power control active and with the transmitter operating at its closest allocated frequency to 775.99375 MHz."[2]

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[2] *See* Appendix in the Comments of Motorola to the Second NPRM, filed December 22, 1997, as part of "In the Matter of The Development of Operational, Technical, and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication

(Continued...)

The Federal Law Enforcement Wireless Users' Group (FLEWUG) has also analyzed the interference at this interface and has determined that "an additional 33 dB of adjacent band attenuation to that proposed by the Commission is required to protect public safety receivers from adjacent emissions of a mobile transmitter." [3]

As part of its review of the US West proposal, Motorola has renewed its investigation of the mobile-to-mobile interference scenarios that occur at the 776 MHz interface, and we agree with the FLEWUG that the proposed rules are insufficient at this interface. We also believe that it is questionable as to whether mobile equipment could be deployed at reasonable cost that could meet rules that might be proposed to mitigate the interference at this interface.

More critically, our analysis indicates that the 776 MHz mobile-to-mobile interference scenario is so critical that it will probably not be possible for a W-CDMA carrier to be used in *any* of the commercial spectrum given the current Public Safety band transmit and receive allocations. This assertion is supported by the mobile transmit spectrum from a W-CDMA mobile as defined by 3GPP, which is shown in Figure 2.

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Requirements Through the Year 2010 and Establishment of Rules and Requirements For Priority Access Service", WT Docket 96-86. ("Public Safety proceeding")

[3] *See* Letter to Kathleen Wallman, Chair of the National Coordination Committee, from Julio R. Murphy and Derek M. Siegle, Co-Chairmen of FLEWUG, dated November 17, 1999.

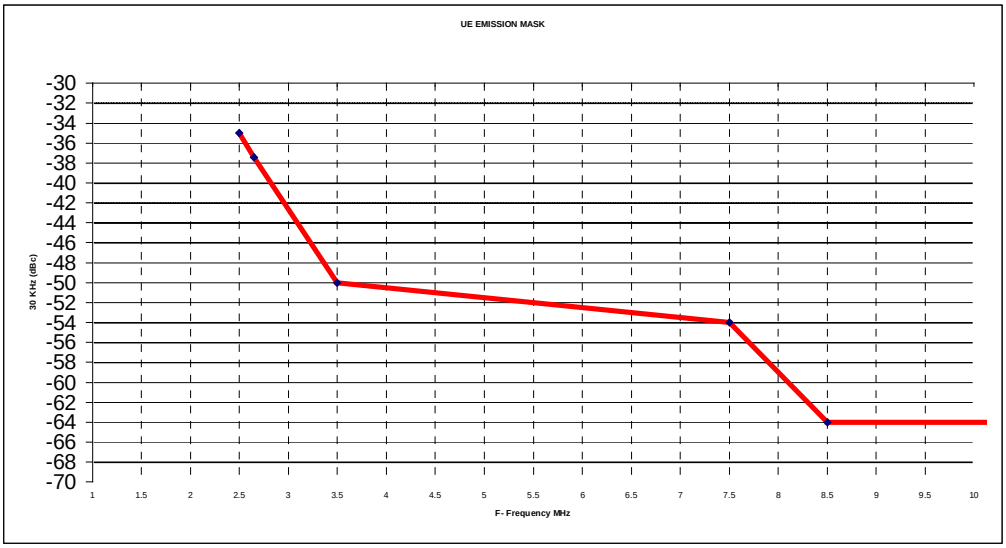

Figure 2: Emission mask for W-CDMA mobile defined by 3GPP

As can be seen in Figure 2, at 7.5 MHz away from the center of a W-CDMA carrier, the emission is required to be only –54 dBc as measured in a 30 kHz bandwidth. This is –61 dBc as measured in a 6.25 kHz bandwidth. Assuming a 24 dBm mobile, this is a level of only –37 dBm. This is not at the level of –75 dBm that Motorola raised as a target in the Public Safety proceeding, and it is not a reduction of 33 dB beyond the FCC's limit as suggested by FLEWUG.

Due to the severity of this problem, we believe that other mitigation techniques should be explored. Motorola is currently investigating the result of reversing the uplink and downlink portions of the Public Safety allocation. (That is, 764-776 MHz would become mobile transmit / base receive, and 794-806 MHz would become mobile receive / base transmit.) If the Public Safety bands are so configured, with the expectation that the commercial systems would align in the same way, the commercial mobile transmit band (746-764 MHz) would be far from the Public Safety mobile receive band (794-806 MHz.) The interference situation of consequence would then become commercial base stations just above 776 MHz transmitting into Public Safety base station receivers just below 776 MHz. We are currently investigating the consequences of this scenario in more detail. Clearly if a "reversed" band plan were adopted, the rules Motorola has proposed for out-of-band emissions into the Public Safety spectrum would need to be slightly altered to reflect the new transmit and receive allocations.

Therefore, we believe that the US West proposal can support a 10 MHz licensee deploying two W-CDMA carriers (or other 3G technologies), as long as the transmit and receive bands in the Public Safety allocation are reversed. It is important to note, however, that the plan does not allow for any wideband carrier to be deployed in the 5 MHz license. We see no variations on the US West plan which will alter this result. That is, we can see no scenario under which more than two W-CDMA carriers can be deployed in the commercial spectrum.

In summary, our study of the US West band plan indicates that, subject to reversing the current Public Safety transmit and receive allocations, this plan would allow for two W-CDMA carriers to be deployed in the spectrum. No other band plan would allow for more than that.

Please contact Leigh Chinitz at (202) 371-6940 regarding any questions concerning this matter.

Respectfully Submitted,

/s/_____
Leigh M. Chinitz
Motorola, Inc.

cc:
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